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10/688,879	10/21/2003	Tsuyoshi Kindo	2003-1497A	2775

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EXAMINER

AMRANY, ADI

ART UNIT	PAPER NUMBER
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2836

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Please find below and/or attached an Office communication concerning this application or proceeding.

H1A

Office Action Summary	Application No. 10/688,879	Applicant(s) KINDO ET AL.	
	Examiner Adi Amrany	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/21/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - a. Paragraph 60, line 2; the phrase should read "the same as steps S10 through S25, as shown in figure 2."
 - b. Paragraphs 77 through 83 appear to be written to a 4th embodiment of the invention, where the user-detecting unit (figures 6 and 7) distinguishes it from embodiments 1- 3 (figures 1-5). The first embodiment (figures 1-2; paragraphs 33-49) comprises a door unlocking detection unit. The second embodiment (figures 1 and 3; paragraphs 50-65) comprises a state determining section for determining the state of the operating system. The third embodiment (figures 4-5; paragraphs 66-76) comprises a door locking detecting unit. The fourth embodiment (figures 6-7; paragraphs 77-83) comprises a user-detecting unit. Appropriate correction is required.

Claim Objections

2. Claims 1-9 are objected to as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. The application is drawn to an apparatus/unit comprising an auxiliary battery that is used to operate a vehicle-installed system upon the triggering of specific events.

The auxiliary battery is used in place of the main vehicle battery for supplying power to boot-up of the vehicle's internal CPU. The auxiliary battery, however, can only

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be recharged through the main battery. In such an instance, the auxiliary battery is simply an extension of the main battery. And further, when viewed from the power control unit (115), the auxiliary and main batteries would not be considered as distinct components. It does not appear that there is a difference between supplying power directly from the main battery or temporarily storing that same amount of power in an auxiliary battery.

Applicants disclose that the auxiliary battery is required because the main battery only supplies +B power when the vehicle ignition is off, and that +B is not sufficient to power the apparatus. Applicants, however, do not provide for why the ignition OFF setting for +B cannot be increased. According to the prior art discussed below, the main battery provides enough power to initiate boot-up of the CPU open detection of an unlocked door. Applicants do not provide a sufficient written description detailing why an auxiliary battery setup is necessary.

3. Claims 7-9 are objected to as failing to be patentably distinct from previous independent claims 1 and 5-6, respectively. Claims 7-9 contain the same limitations as claims 1 and 5-6 with the following exceptions:

The beginning of claims 7-9 recite "a vehicle-installed apparatus for controlling a power supply of a computer, which operates by obtaining a power supply from a main power source during normal operation, in a vehicle including..." while claims 1, 5-6 recite "a power control unit for controlling a power supply of a computer, which operates by obtaining a power supply from a main power source during normal operation, *in a*

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vehicle including..." It is evident that both sets of claims are identical. Any minor differences in wording do not distinguish claims 7-9 from claims 1 and 5-6.

Another difference between the two sets of claims appears to be the placement of "an auxiliary battery." Claims 1 and 5-6 recite this limitation before "comprising," while claims 7-9 recite it after.

Both sets of claims are drawn to an apparatus for controlling the power supply of a computer within a vehicle. Claim 7 is not distinct from claim 1, claim 8 is not distinct from claim 5, and claim 9 is not distinct from claim 6. Claims 7-9 will be considered as duplicates of claim 1 and 5-6, and therefor, the art rejection of claims 1 or 5-6 will be applied to claims 7-9.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirkhart (US 6,059,843), in view of Amano (US 6,806,588).

With respect to claim 1, Kirkhart discloses a power control unit (figure 2, item 50; column 3, lines 17-21 and 32-38) for controlling a power supply of a computer (figure 2, item 22; column 2, lines 59-67), which operates by obtaining a power supply from a main power source during normal operation (figure 2, item 48; column 3, lines 14-17), in

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a vehicle (figure 1) including an unlocking detecting section (column 4, lines 4-9; column 5, lines 26-30) for detecting whether or not a door of the vehicle is unlocked, an ignition key detecting section (column 3, lines 49-62, 63-66) for detecting whether or not an ignition key is switched from ON to OFF, and a battery, comprising:

A battery control section (column 4, lines 31-38) for booting up the computer by starting a power supply from the auxiliary battery to the computer when the unlocking detecting section detects that the door is unlocked;

and a power source switching section (figure 4, step 96; column 5, lines 3-7 and 43-52) for stopping a power supply from the battery and starting a power supply from the main power source when the ignition key detecting section detects that the ignition key is switched from OFF to ON during the power supply from the battery.

Kirkhart discloses a battery control section that configures the main battery of the vehicle to switch to low-power mode to boot-up the computer. When the detection circuitry determines that the ignition is ON, the main battery and other components of the vehicle are switched to full power mode.

Kirkhart does not expressly disclose an auxiliary battery or that the power source switching section stops a power supply from the auxiliary battery.

Amano discloses a power control for a vehicle comprising a main battery and an auxiliary battery (figure 1, item 2; column 3, lines 23-27), which can be activated while the vehicle's ignition is off. Amano further discloses an auxiliary battery control section

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(figure 1, item 24; column 3, lines 47-58) for discharging power from the auxiliary battery depending on the size of the loads and the power remaining in the battery.

Kirkhart and Amano are analogous because they are from the same field of endeavor, namely power control units for vehicle power supplies.

At the time of the invention by applicants, it would have been obvious to a person of ordinary skill in the art to replace the low-power and high-power modes of the vehicle's main battery disclosed in Kirkhart, with the two battery system and auxiliary battery control section disclosed in Amano.

The motivation for doing so would have been to supply power from the auxiliary battery while the vehicle is off in order to maintain the main battery at a sufficient level to start the engine.

With respect to claim 2, Kirkhart and Amano disclose the power control unit according to claim 1. Amano further discloses the auxiliary battery control section monitors an amount of power remaining in the auxiliary battery (figure 1, item 23, column 3, lines 48-49), and boots up the computer by starting a power supply from the auxiliary battery to the computer only when the unlocking detecting section detects that the door is unlocked and the amount of power remaining in the auxiliary battery is equal to or greater than a predetermined value (figure 2, steps 170, 180 and 190; column 5, lines 41-67; column 6, lines 40-64).

Amano discloses a power control unit that detects the power remaining in the main and auxiliary batteries while the engine is off. Amano recites that loads may be shut off in order of priority as the batter power level decreases (column 6, lines 55-64).

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This is analogous to not turning on a load if there is insufficient power in the battery to activate the load.

At the time of the invention by applicants, it would have been obvious to a person of ordinary skill in the art to combine the power control, unlock detection, and ignition detection disclosed in Kirkhart with the battery control section monitors disclosed in Amano.

The motivation for doing so would have been to provide a control system for a vehicle power supply, which can operate the load of a low voltage system while an ignition switch remains off (column 1, lines 53-57).

With respect to claim 5, Kirkhart discloses a power control unit (figure 2, item 50; column 3, lines 17-21, 32-38) for controlling a power supply of a computer (figure 2, item 22; column 2, lines 59-67), which operates by obtaining a power supply from a main power source during normal operation (figure 2, item 48; column 3, lines 14-17), in a vehicle (figure 1) including an unlocking/locking detecting section (column 4, lines 4-9; column 5, lines 26-30) for detecting whether or not a door of a vehicle is unlocked/locked, an ignition key detecting section (column 3, lines 49-66) for detecting whether or not an ignition key is switched from ON to OFF, and a battery, comprising:

- a time measuring section (column 5, lines 52-57) for measuring a predetermined time from when the unlocking/locking detecting section detects that the door is unlocked;

- a battery control section (column 4, lines 31-38) for booting up the computer by starting a power supply from the battery to the computer if the

unlocking/locking detecting section does not detect that the door of the vehicle is locked while the time measuring section measures the predetermined time;

and a power source switching section (figure 4, step 96; column 5, lines 3-7 and 43-52) for stopping a power supply from the battery and starting a power supply from the main power source when the ignition key detecting section detects that the ignition key is switched from OFF to ON during the power supply from the battery.

Kirkhart does not expressly disclose the auxiliary battery and the auxiliary battery control section. Amano discloses an auxiliary battery and an auxiliary battery control section, as discussed above. The motivation for combining the references is provided above in the rejection of claim 1.

With respect to claim 6, Kirkhart discloses a power control unit (figure 2, item 50; column 3, lines 17-21, 32-38) for controlling a power supply of a computer (figure 2, item 22; column 2, lines 59-67), which operates by obtaining a power supply from a main power source during normal operation (figure 2, item 48; column 3, lines 14-17), in a vehicle (figure 1) including an unlocking detecting section (column 4, lines 4-9; column 5, lines 26-30) for detecting whether or not a door of the vehicle is unlocked, an ignition key detecting section (column 3, lines 49-66) for detecting whether or not an ignition key is switched from ON to OFF, a battery, and a user detecting section (column 4, lines 15-30) for detecting whether or not a user gets in the vehicle, comprising:

a battery control section (column 4, lines 31-38) for booting up the computer by starting a power supply from the battery installed in the vehicle to

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the computer when the user detecting section detects that the user gets in the vehicle after the unlocking detecting section detects that the door is unlocked;

and a power source switching section (figure 4, step 96; column 5, lines 3-7 and 43-52) for stopping a power supply from the battery and starting a power supply from the main power source when the ignition key detecting section detects that the ignition key is switched from OFF to ON during the power supply from the battery.

The auxiliary battery and the auxiliary battery control section are obvious in view of the disclosure of Amano, as discussed above.

Claims 7-9 are rejected as being obvious over Kirkhart, in view of Amano. Claims 7-9 do not add new limitations not previously rejected in claims 1, 5, and 6, as discussed above.

With respect to claim 7, Kirkhart discloses the recited limitations of the vehicle-installed apparatus, as discussed above in regard to the rejection of claim 1. Amano discloses an auxiliary battery and an auxiliary battery control section.

With respect to claim 8, Kirkhart discloses the recited limitations of the vehicle-installed apparatus, as discussed above in regard to the rejection of claim 5. Amano discloses the auxiliary battery and auxiliary battery control section.

With respect to claim 9, Kirkhart discloses the recited limitations of the vehicle-installed apparatus, as discussed above in regard to the rejection of claim 6. Further, Amano discloses the auxiliary battery and auxiliary battery control section.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kirkhart, in view of Amano, in further view of Gillespie (US 6,393,573).

Kirkhart and Amano disclose the power control unit according to claim 1, but neither references expressly discloses a state determining section for determining a start and end state of the computer, wherein the auxiliary battery control section boots up the computer by starting a power supply from the auxiliary battery to the computer only when the unlocking detecting section detects that the door is unlocked and the state determining section determines that the computer is in a state in which it is not capable to be booted up unless an initial boot-up is completed.

Gillespie discloses a power control unit for a multimedia system within a vehicle that performs a system boot-up only if it determines that the system requires a boot-up. The multimedia system comprises different start and end states (figure 2). The Gillespie power control unit provides for different methods to boot-up the multimedia system depending on the state of the system (column 4, line 13 to column 5, line 15). The system can be in several states, including: no power, sleep, power save, standby, standby+, and full power. Gillespie discloses that the time to boot-up the system from a no power state can be achieved in 6 to 10 seconds. The time to boot-up from standby or sleep, however, only takes 1 or 2 seconds, since the memory of the system has been saved (column 5, lines 17-23).

Kirkhart, Amano, and Gillespie are analogous because they are from the same field of endeavor, namely power control units for vehicle electronic components.

At the time of the invention by applicants, it would have been obvious to a person of ordinary skill in the art to combine the power control, unlock detection, and ignition detection disclosed in Kirkhart and Amano with the processor state determining section disclosed in Gillespie.

The motivation for doing so would have been to create a power management strategy, which reduces power consumption and boot-up time to facilitate the use of the in-vehicle computer system (Gillespie, column 1, lines 9-14).

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kirkhart, in view of Amano, in further view of Hirano (US 4,688,036).

Kirkhart and Amano disclose the power control unit according to claim 1, but do not expressly disclose the ignition key of the vehicle and the auxiliary battery control section include authentication information for identifying a user of the vehicle,

the vehicle obtains the authentication information from the ignition key when it is detected that the door is unlocked,

and only when the unlocking detecting section detects that the door is unlocked and the authentication information included in the auxiliary battery control section coincides with the authentication information obtained by the vehicle, the auxiliary battery control section boots up the computer by starting a power supply from the auxiliary battery to the computer.

Hirano discloses a remote entry device for a vehicle containing a unique code signal that must be sent by the transmitter in order for the receiver to produce a driver signal to process the command (column 3, line 39 to column 4, line 9).

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Kirkland, Amano, and Hirano are analogous because they are from the same field of endeavor, namely devices that control power consumption within a vehicle.

At the time of the invention by applicants, it would have been obvious to a person of ordinary skill in the art to combine the power control, unlock detection, and ignition detection disclosed in Kirkhart and Amano with the authentication information disclosed in Hirano.

The motivation for doing so would have been to provide a keyless entry to a vehicle that conserves electric power; by preventing the boot-up of the computer until the correct authentication code has been received (column 2, lines 1-3).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adi Amrany whose telephone number is (571) 272-0415. The examiner can normally be reached on weekdays, from 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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PRIMARY EXAMINER